FIG. 1

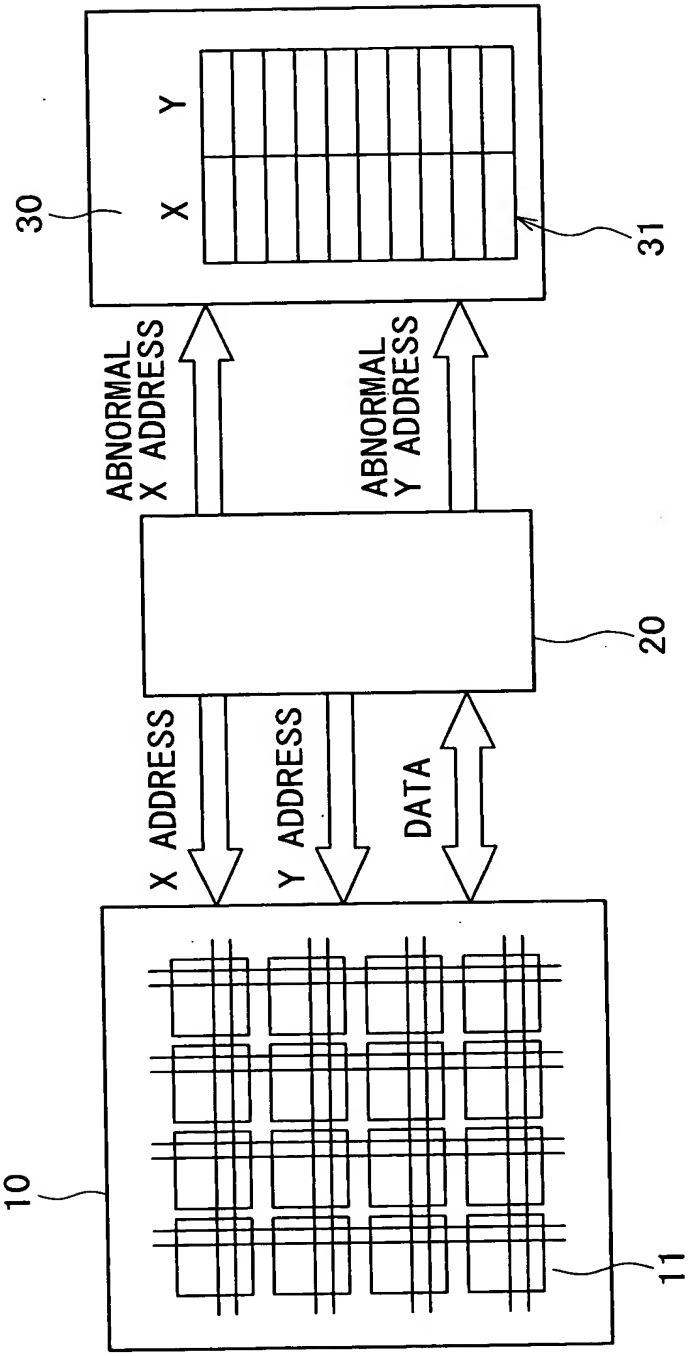
30
X
Y
31
ABNORMAL X ADDRESS
ABNORMAL Y ADDRESS
20
X ADDRESS
Y ADDRESS
DATA
10
11

FIG. 2

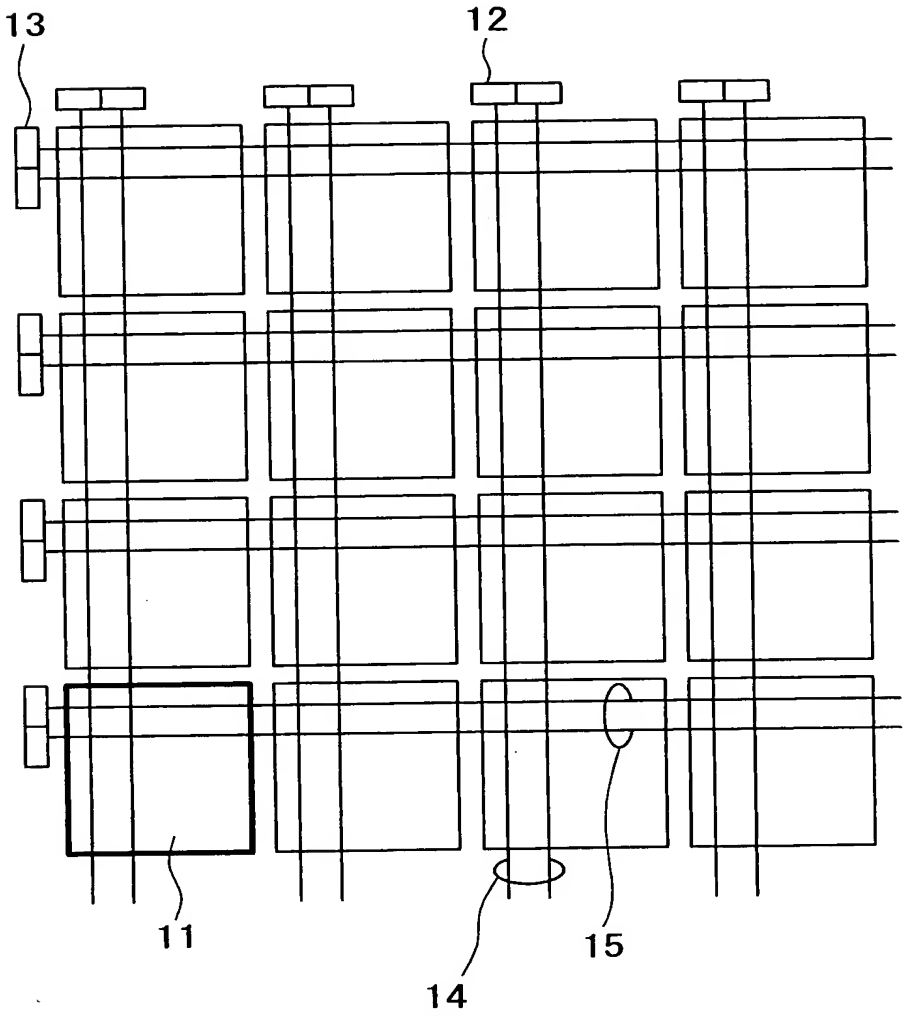

FIG. 3

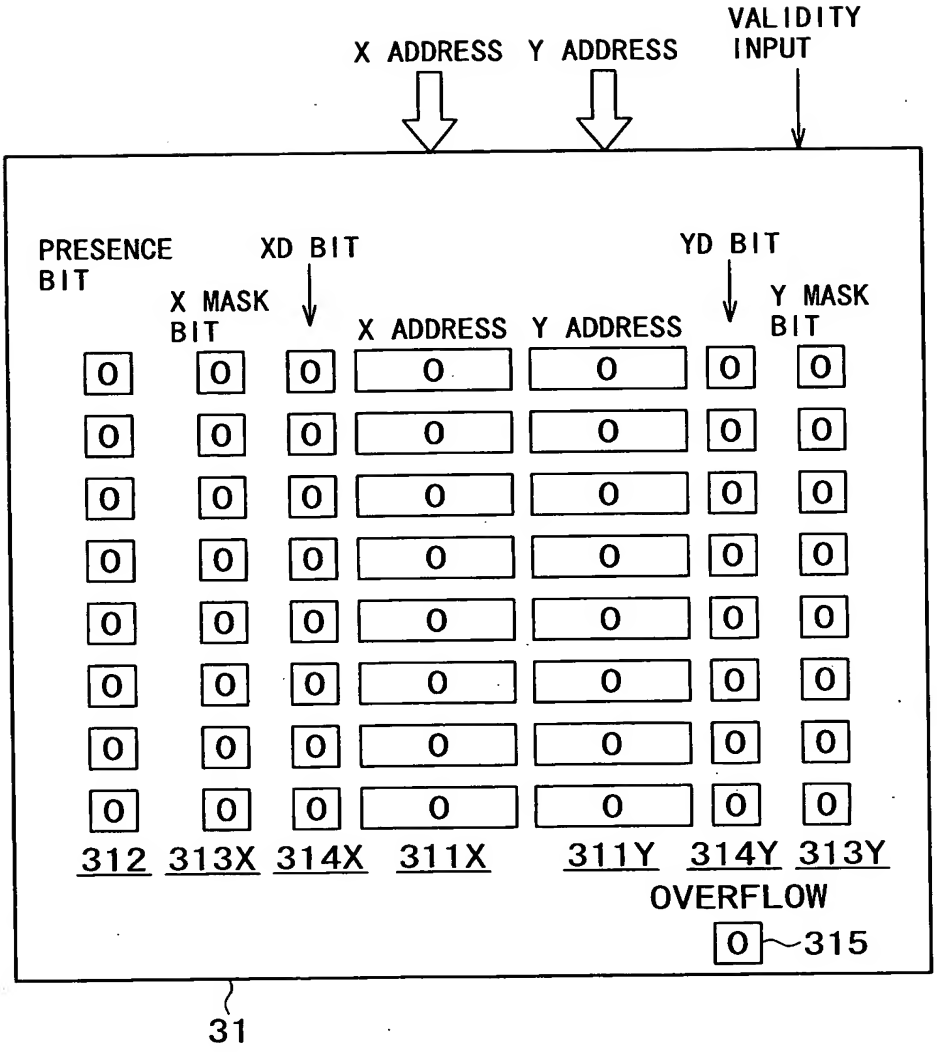
VALIDITY INPUT
X ADDRESS
Y ADDRESS
PRESENCE BIT
XD BIT
YD BIT
X MASK BIT
X ADDRESS
Y ADDRESS
Y MASK BIT
0
312
313X
314X
311X
311Y
314Y
313Y
OVERFLOW
315
31

FIG. 4

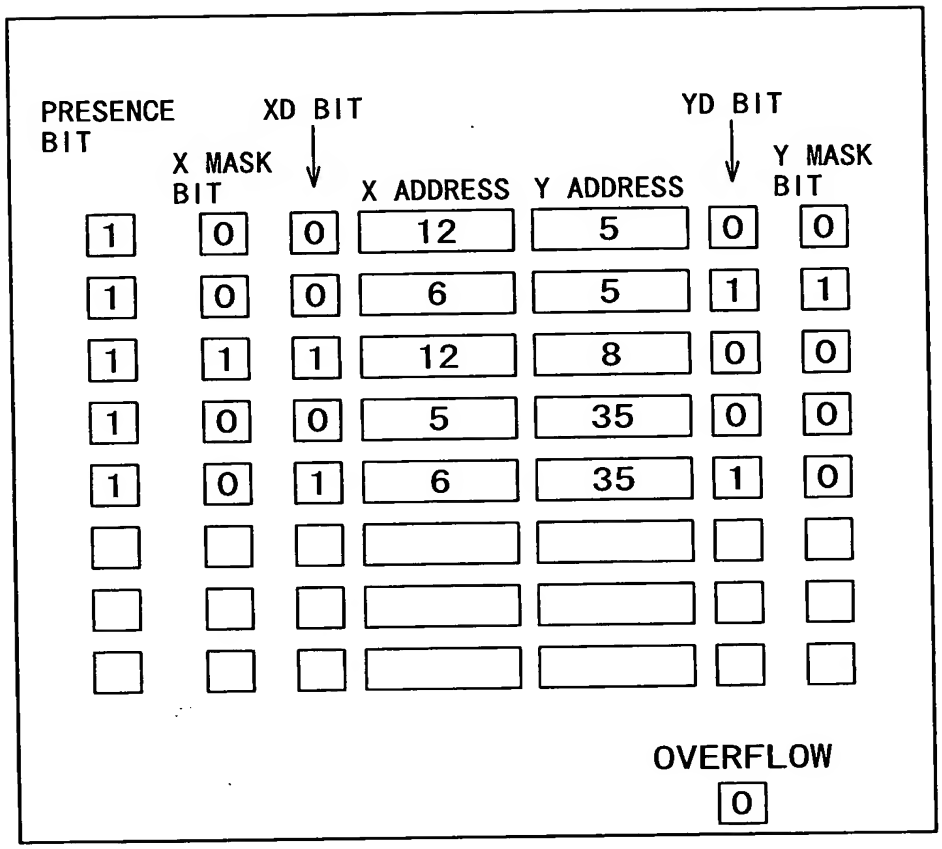
PRESENCE BIT
X MASK BIT
XD BIT
X ADDRESS
Y ADDRESS
YD BIT
Y MASK BIT
1 0 0 12 5 0 0
1 0 0 6 5 1 1
1 1 1 12 8 0 0
1 0 0 5 35 0 0
1 0 1 6 35 1 0
OVERFLOW
0

FIG. 5

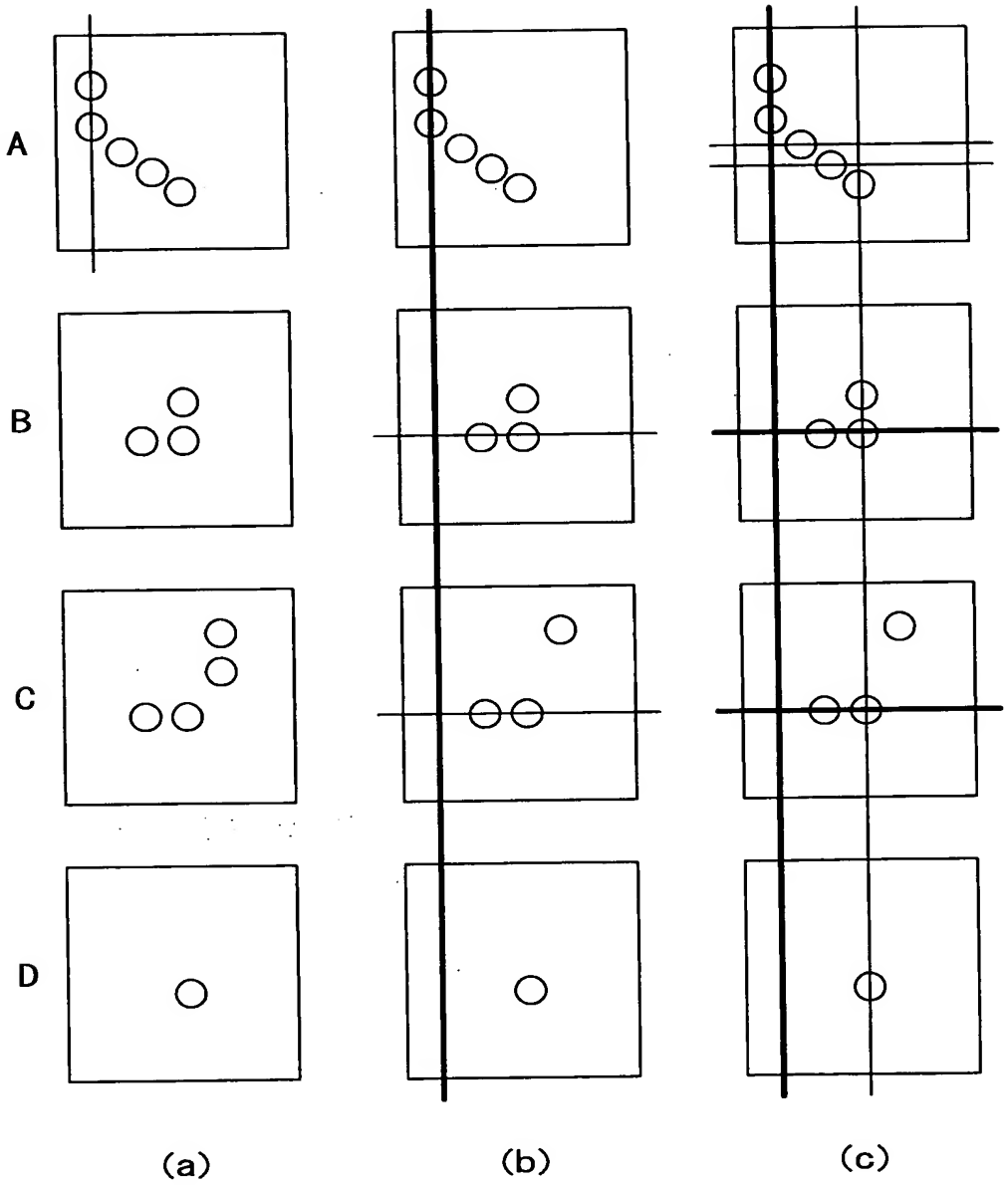

FIG. 6

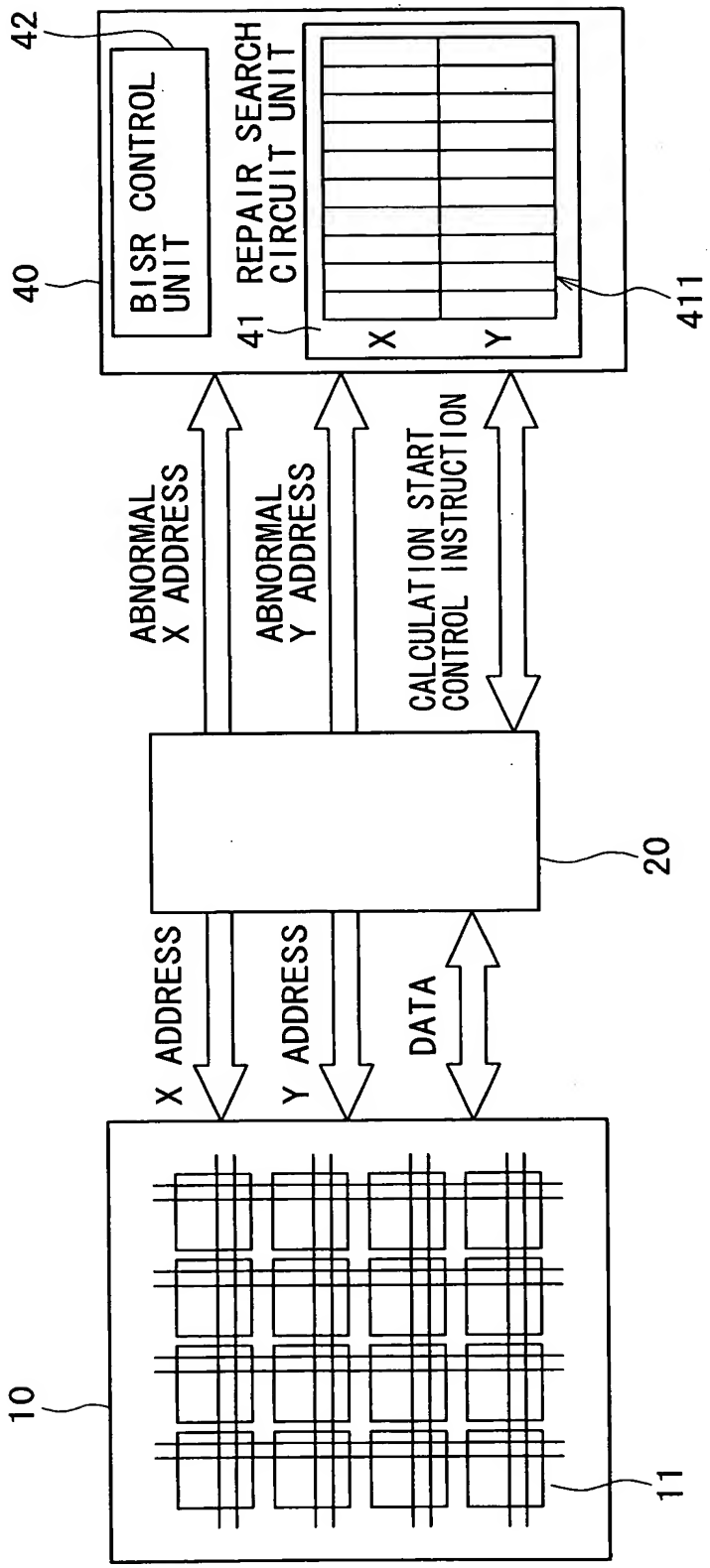
42
BISR CONTROL UNIT
40
41 REPAIR SEARCH CIRCUIT UNIT
X
Y
411
ABNORMAL X ADDRESS
ABNORMAL Y ADDRESS
CALCULATION START CONTROL INSTRUCTION
20
X ADDRESS
Y ADDRESS
DATA
10
11

FIG. 7

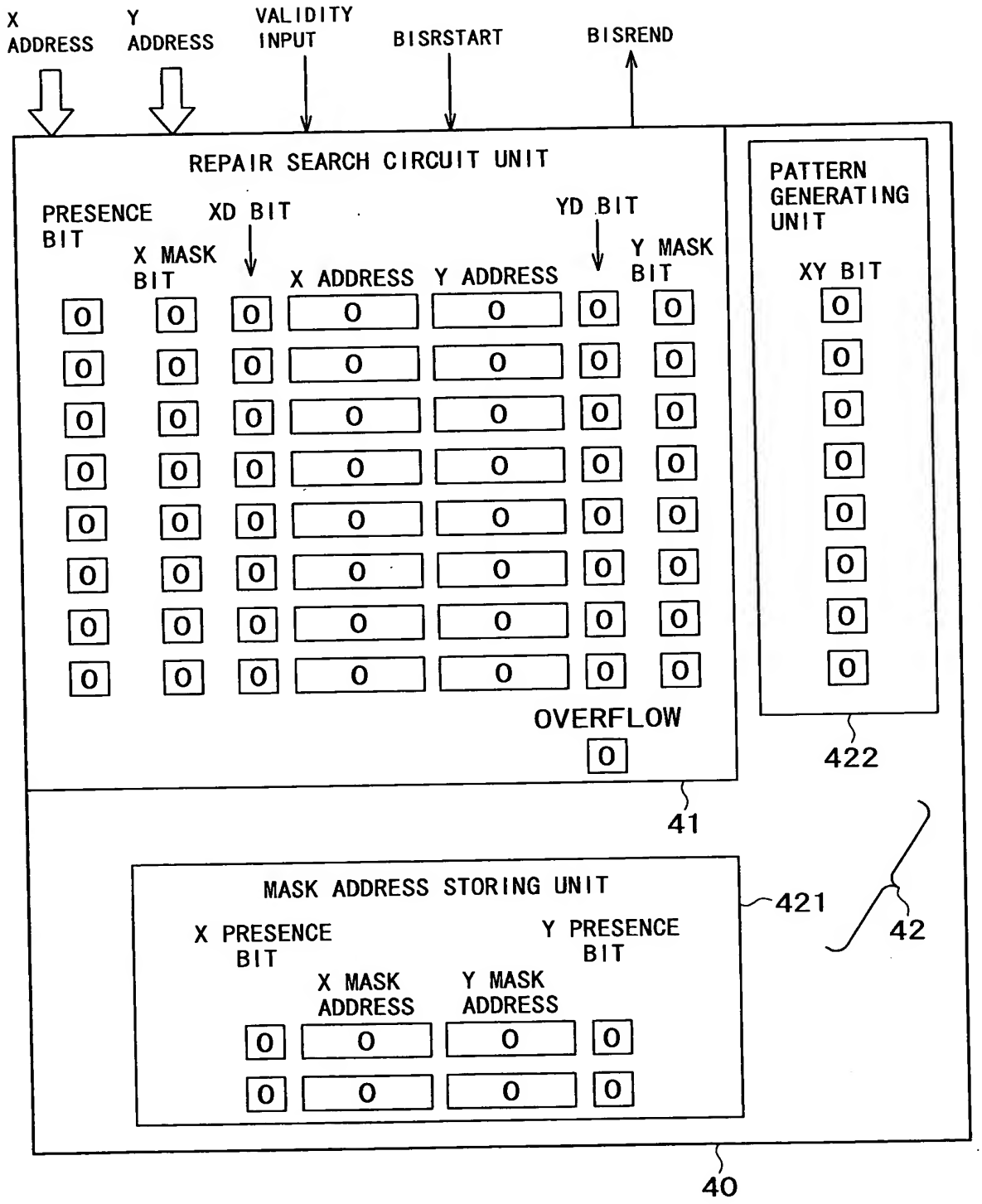
X ADDRESS
Y ADDRESS
VALIDITY INPUT
BISRSTART
BISREND
REPAIR SEARCH CIRCUIT UNIT
PRESENCE BIT
XD BIT
X MASK BIT
X ADDRESS
Y ADDRESS
YD BIT
Y MASK BIT
OVERFLOW
41
PATTERN GENERATING UNIT
XY BIT
422
MASK ADDRESS STORING UNIT
421
X PRESENCE BIT
Y PRESENCE BIT
X MASK ADDRESS
Y MASK ADDRESS
42
40

FIG. 8

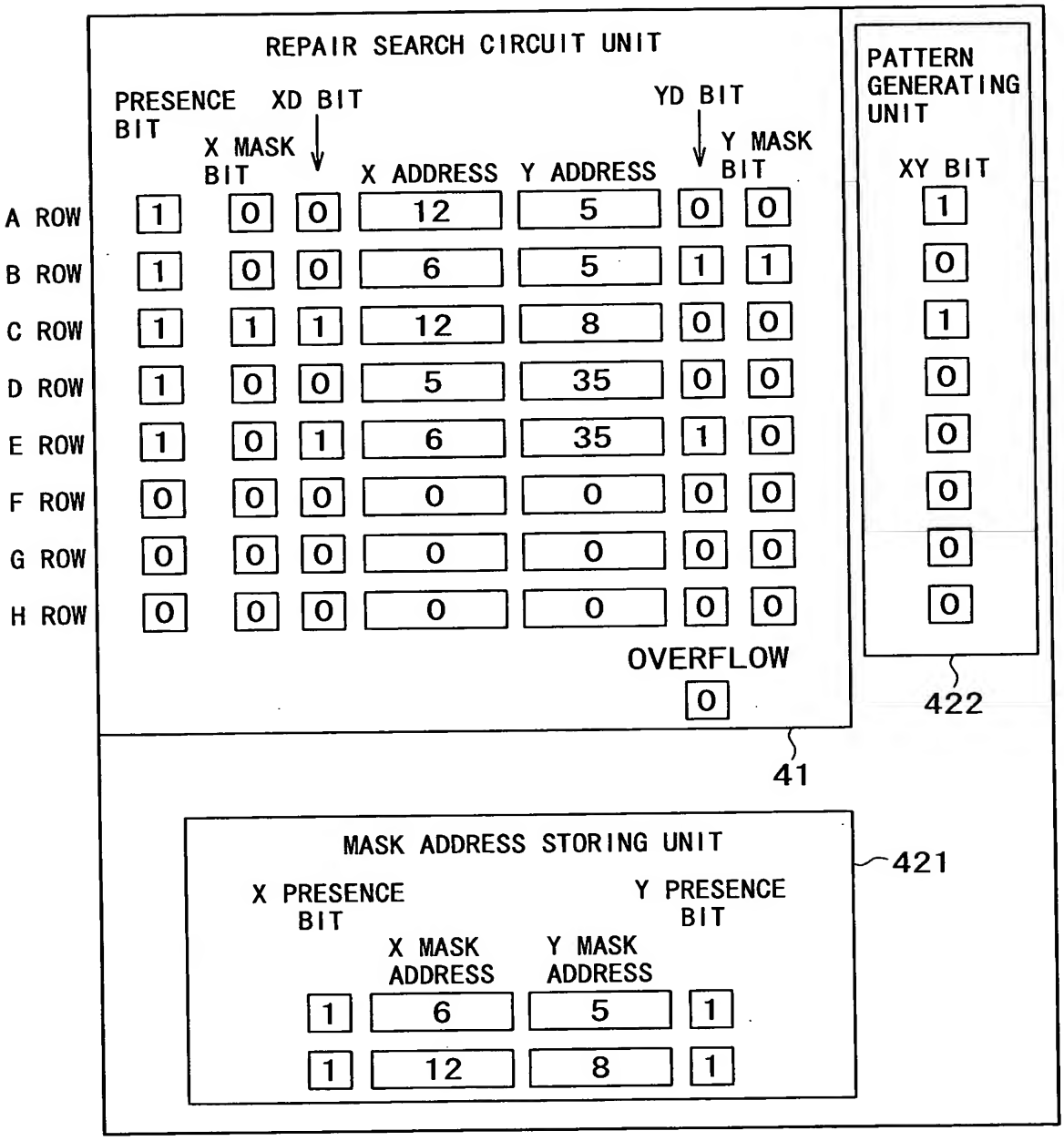
REPAIR SEARCH CIRCUIT UNIT
PRESENCE BIT
XD BIT
X MASK BIT
X ADDRESS
Y ADDRESS
YD BIT
Y MASK BIT
A ROW 1 0 0 12 5 0 0
B ROW 1 0 0 6 5 1 1
C ROW 1 1 1 12 8 0 0
D ROW 1 0 0 5 35 0 0
E ROW 1 0 1 6 35 1 0
F ROW 0 0 0 0 0 0 0
G ROW 0 0 0 0 0 0 0
H ROW 0 0 0 0 0 0 0
OVERFLOW
0
41
PATTERN GENERATING UNIT
XY BIT
1
0
1
0
0
0
0
0
422
MASK ADDRESS STORING UNIT
421
X PRESENCE BIT
Y PRESENCE BIT
X MASK ADDRESS
Y MASK ADDRESS
1 6 5 1
1 12 8 1

FIG. 9

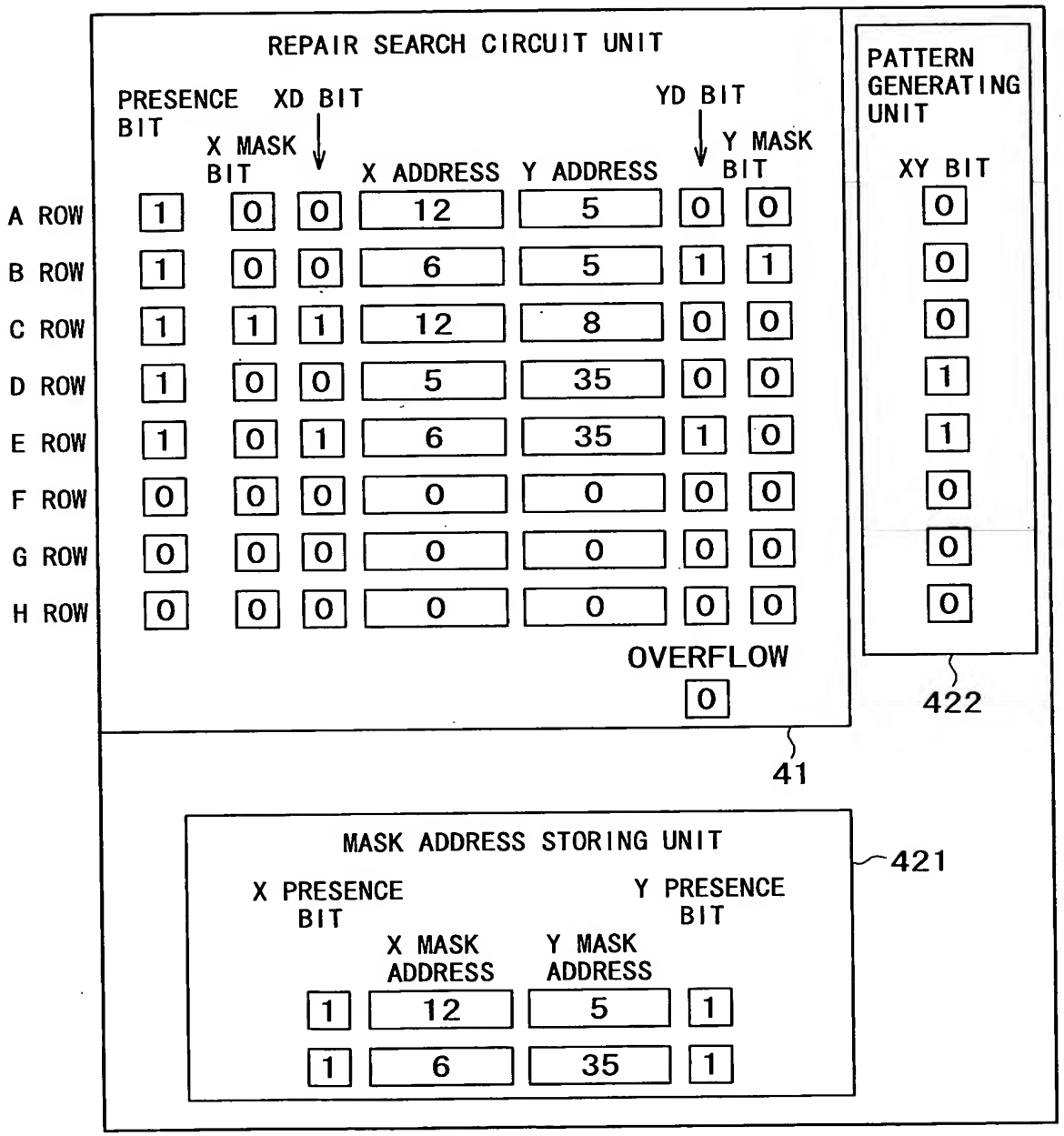
REPAIR SEARCH CIRCUIT UNIT
PRESENCE BIT
XD BIT
X MASK BIT
X ADDRESS
Y ADDRESS
YD BIT
Y MASK BIT
A ROW 1 0 0 12 5 0 0
B ROW 1 0 0 6 5 1 1
C ROW 1 1 1 12 8 0 0
D ROW 1 0 0 5 35 0 0
E ROW 1 0 1 6 35 1 0
F ROW 0 0 0 0 0 0 0
G ROW 0 0 0 0 0 0 0
H ROW 0 0 0 0 0 0 0
OVERFLOW 0
41
PATTERN GENERATING UNIT
XY BIT
0
0
0
1
1
0
0
0
422
MASK ADDRESS STORING UNIT
421
X PRESENCE BIT
Y PRESENCE BIT
X MASK ADDRESS
Y MASK ADDRESS
1 12 5 1
1 6 35 1

FIG. 10

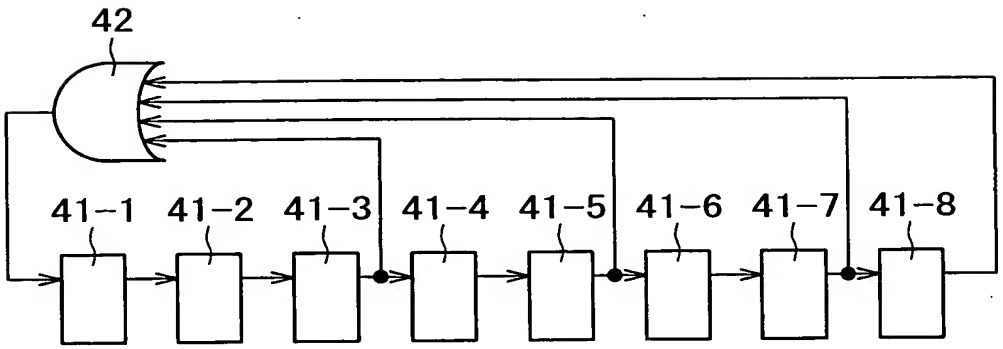

FIG. 11A

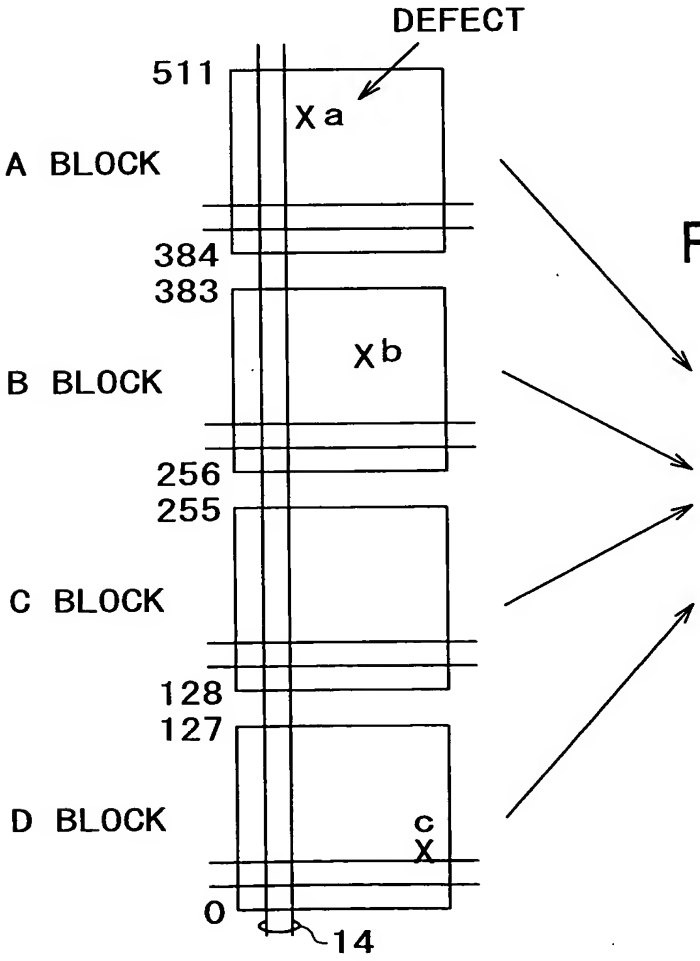

FIG. 11B

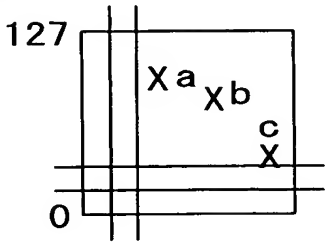

FIG. 12A

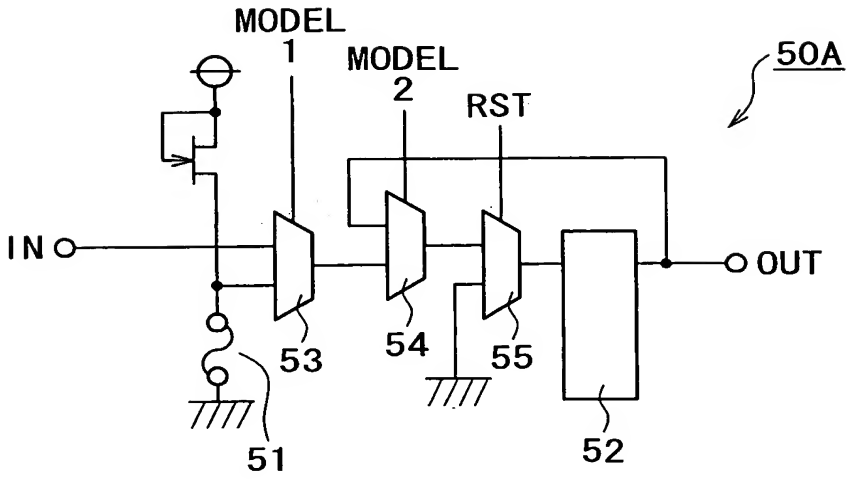

FIG. 12B

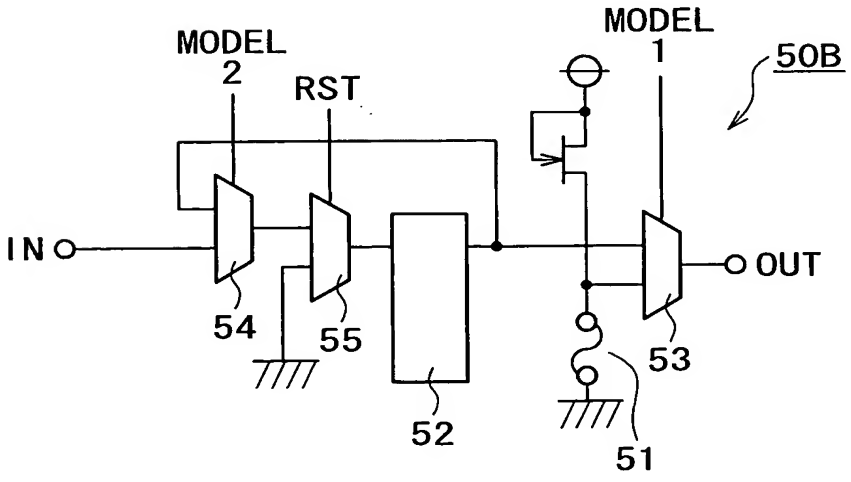

FIG. 13

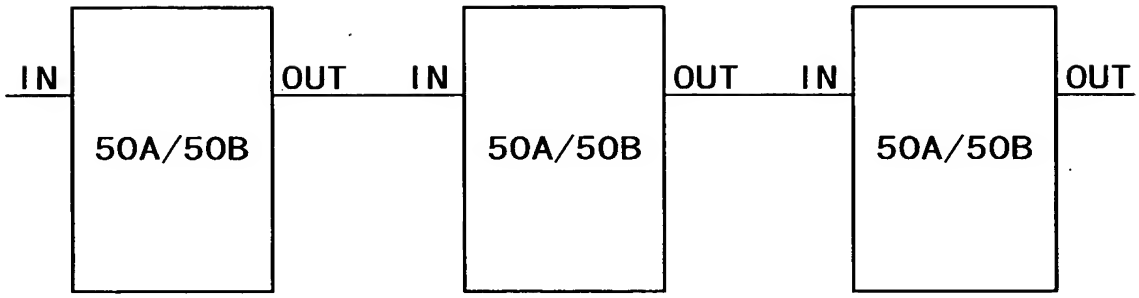
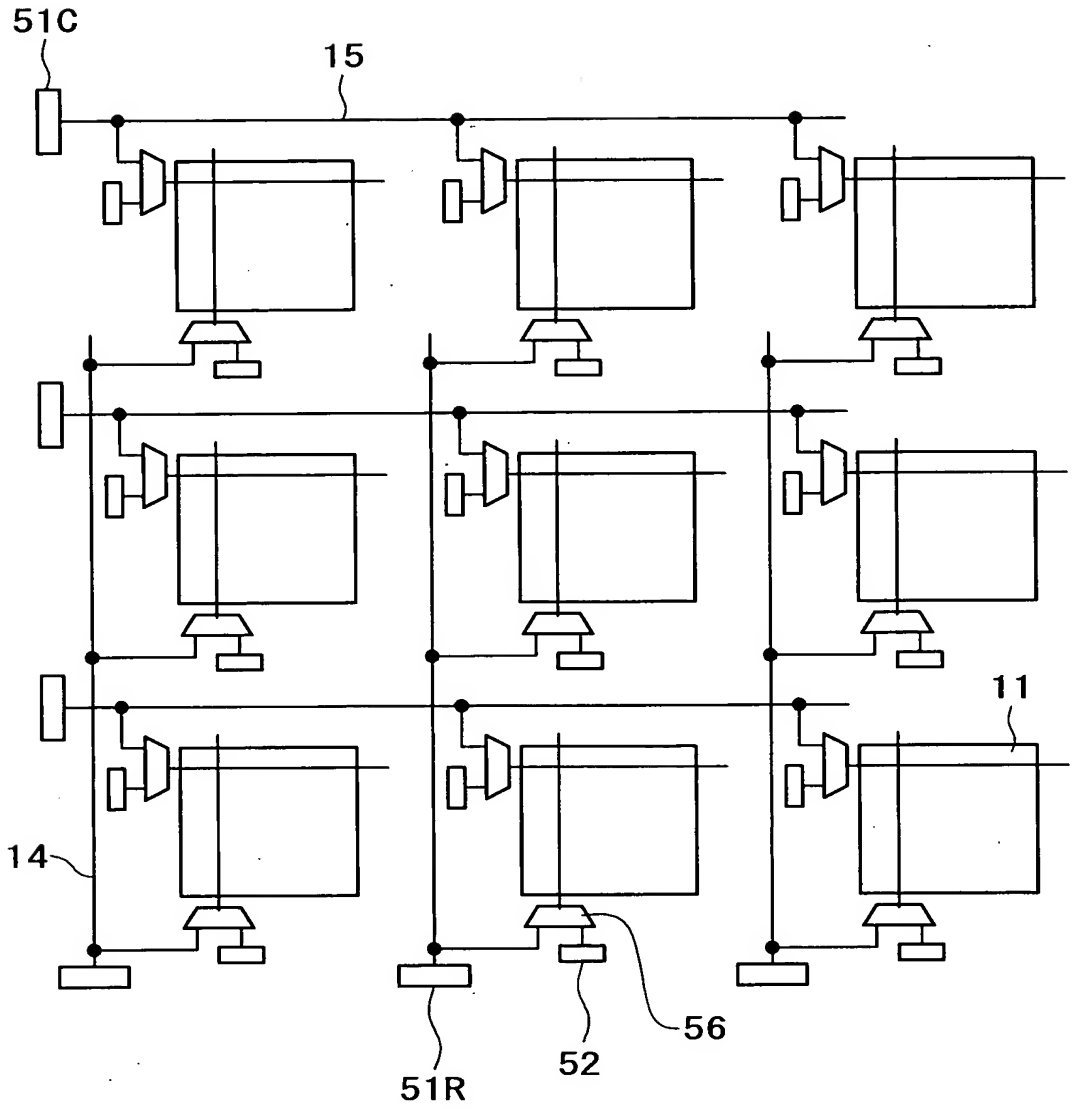
FIG. 14